Degree algorithms, grade inflation and equity: the UK higher education sector

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Abstract
This article extends the Universities UK – GuildHE (2017) report on degree algorithms and complements the work of Sinclair *et al* (2017). By applying a range of different algorithms to a set of individual module marks and to the marks from a medium sized undergraduate programme, it reveals wide variation in the degree classification that could be awarded. In the case of the individual set of marks, the degree outcome ranges from an upper second (66.69%) to a 1^{st} (70.72%). In terms of the programme, the proportion of first class honours awarded over a 3 year period can range from 16% to 32%. This wide variation in degree outcomes has clear implications for any performance measure based on the number of 'good honours awarded' and calls into question any ranking that uses 'good honours' in its metrics. It may also be a driver of the widely reported 'grade inflation' witnessed in the UK Higher Education sector and further afield. At an individual level, that one set of marks can result in two different degree outcomes is counter to notions of equity.

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Introduction

The Universities UK-GuildHE project [hereafter UUK/GHE] into the configuration of degree algorithms (the process universities use to translate module outcomes into a final degree classification) is timely and informative and is the culmination of a series of 'Burgess reports' (2004, 2007 and 2012) which look at how UK universities calculate and/or describe a student's final degree achievements.

While the first Burgess Report (2004) made a strong case for fundamentally reviewing the system for classifying UK honours degrees, the UUK/GHE 2017 report makes little mention of any fundamental review of current practice noting instead that adoption of the Grade Point Average [GPA] "has been slow and that there is little firm appetite for future uptake" (pages 5 and 45).

Instead, the final report (*Understanding Degree Algorithms*, Oct 2017) offers a broad overview of the 'practice and trends' in the design of degree algorithms across the UK higher education sector.

The key recommendations of the report surround the transparency and accountability of practice around degree algorithms, and include:

- Improve transparency of the algorithm used by institutions and the justification of changes to ensure that they are rooted in sound pedagogy and strong academic governance.
- Include principles for the design of degree algorithms in a revised quality code to ensure that there is a clear framework for practice and accountability around the sector.
- Ensure that the rules governing assessment of borderline cases do not have the inadvertent effect of lowering the threshold of degree classifications (Universities UK, Sept 2017).

The current interest in degree algorithms is part of the broader debate concerning grade inflation and academic standards. In his speech to Universities UK [UUK] in July 2015, Jo Johnson said he found it “startling” that since the 1990s, there has been a 300 per cent increase in the number of firsts. He noted also that: “Over 70 per cent of graduates now get a First or U2 (2:1) – up by 7 percentage points in the past 5 years – and compared to just 47 per cent in the mid-1990s.” In this speech, Jo Johnson also cited Higher Education Academy’s 2015 findings (HEFCE 2015) that nearly half of UK HE institutions had changed their honours-awarding rules. In his more recent speech at the UUK annual conference (September 2017), Jo Johnson again highlighted the increasing volume of 1st and U2s as a potential risk to confidence in academic standards (Johnson 2017).

What Jo Johnson and the UUK/GHE report have not specifically addressed is the impact different algorithms have on individual marks and the overall distribution of classifications on a given award. This article fills this important gap by investigating the impact of the different methods currently used by UK universities to determine a student’s degree classification.

The first section offers a broad overview of the way universities calculate the student’s degree mark which in turn determines the degree classification (1st, U2, L2 or 3rd). This section also reviews the pedagogical rationale for particular algorithms. Section 2 offers a brief snapshot of the survey conducted as part of the UUK/GHE 2017 project. Section 3 offers results on applying different algorithms to one student’s set of marks, where Section 4 does the same but for a set of cohort marks covering three years, both simulations include a GPA equivalent calculation. This paper finishes by exploring policy options that could address the problems associated with the diversity in UK degree algorithms.

1: Diverse and complex algorithms

While all UK universities adopt the same classification system (1st, U2, L2, 3rd) how universities arrive at these classifications is a very different matter. The variation comes in how the average of each ‘counting’ year is weighted and whether some module marks are ‘discounted’ or removed from the calculation. A trawl of numerous UK? university web sites [not all] reveals a wide range of algorithms of varying complexity; these are grouped into three broad categories.

The weighted average

At one end of the spectrum we can have a simple average of all year 2 and year 3 marks (Oxford Brookes), moving through various combinations of weightings (e.g. 20/80 – Birmingham and Derby, 25/75 – Hertfordshire, 33/67- Manchester, Nottingham and Westminster, 35/65 - Surrey, 40/60 – UAE and Kent). When year 1 marks are included, the weighting applied is typically low (e.g. 10/30/60 respectively – see table 1). To the knowledge of this author, no UK University publishing the traditional degree classification uses an algorithm where all years (1, 2, and 3) are treated equally (as is the case with the GPA calculation).

Discounting + Weighting

There are algorithms that use the same or similar weightings but applied to only the best 180 credits (Wolverhampton) or best 220 credits (Westminster) out of the year 2 and 3 (240 in total), or the best 100 or 90 credits at each level (UWE and Herefordshire respectively). At UWE, the degree classification is based on the best 100 credits at year 3 where the 20 unused credits are 'batched' with year 2 credits, the best 100 credits (from this total of 140 credits) are then used in the calculation, weighted 1:3 for years 2 and year 3 respectively.

Multiple Rules Algorithms

Another category of algorithm uses more than one algorithm or 'rule'. Typically, these start with the weighted average however derived (call it rule 1) and then apply a second rule (rule 2). The outcome of both rules are compared and the final classification is usually based on whichever rule returns the higher classification.

- In the case of Leeds, rule 1 is based on the simple weighted average between year 2 and 3 (weight 1:1) and compared to rule 2, where the years are weighted 1:2 respectively.
- For Kent, rule 1 is the weighted average of years 2 and 3 (40/60 respectively), rule 2 then applies the preponderance principle, for example, if 50% of a student's 'counting credits' are 70% or above, rule 2 would award a 1st. In Kent, this preponderance principle is applied to marks that are equal to or less than three percentage points below any given classification boundary (i.e. 47%, 57%, and 67%).
- In Sheffield, rule 1 derives the weighted average taking all year 2 and 3 marks into account but counts year 3 marks twice, rule 2 then splits all the 'counting' credits in to 10-credit units giving 36 ten unit credits in total. These 36 marks are then ranked and the 18th mark is taken as the alternative classification.
- In Portsmouth, three rules are applied. Rule 1 is the weighted average of the best 100 credits at year 2 and 3 weighed 40/60 respectively; rule 2 is the weighted average of the best 100 credits at year 3; and rule 3 is the preponderance of credits in the various classification categories.

Borderline marks and 'uplifts'

Most algorithms take the degree 'average' to either one or two decimal points e.g. 69.5% or 69.45%. This results in borderline marks where the exam board is a called upon to determine what classification is awarded.

There are various methods, one includes using a simple rule whereby marks equal to or less than 0.5% below a classification boundary are awarded the higher classification 'automatically' and confirmed by the exam board (thus a 1st does not start at 70%, it starts at 69.5% - a 'lowering of the threshold of degree classifications').

Alternatively, marks within a given band (e.g. 68.5% - 69.49%) might be granted an 'uplift' in classification (here from a U2 to a 1st) using the preponderance principle: a 1st could be awarded if the student has 60 credits in the higher boundary in their final year. The exam board might decide the 'uplift' 'by eye' or, in the case of Kent, as a rule hardwired within the algorithm software (see above). Suffice to say these borderline adjustments can have a significant impact on the award profile for a given programme (as can any rounding convention written into university software).

Rationale behind a given algorithm

Differential weightings

The variation in algorithms is generally justified on pedagogical grounds. The larger weighting given to year 3 marks captures the notion of the student's 'exit velocity' or the "standard that the student is performing at as they graduate from the institution" (UUK/GHE, 2017, p.26). Alternatively, the higher weightings on year three might reflect a university's requirement that programmes must become demonstrably more challenging as students progress through them.

Whereas the absence of any weighting at year 1 might reflect "greater emphasis on inculcating students to the requirements of university study, for example where a large proportion come from widening participation backgrounds" (UUK/GHE, 2017, p.27) further justifications suggest that the different algorithms can help to shape student behaviour and motivation, but this presupposes they understand the algorithm in the first place. Here the interested reader might like to see a YouTube video[1] posted by Sheffield University and the comments provided below this video.

Discounting

In discounting credits, the purpose would be to recognise consistent performance. At one level, this involves removing outliers from either end of the range of performance, but as the UKK/GHE report notes "this does not appear to translate into practice" (p.37). Alternatively, discounting the lowest marks is often justified if, in the opinion of an examining board, the mark in a particular module does not reflect the student's performance and ability. While this argument has merit on an individual basis, as a decision rule, removing the lowest marks for all students can only have one obvious purpose and, as the UUK/GHE report comments, "If only the worst, outlying marks are omitted, it is possible that this would lead to grade inflation" (p.37).

[1] https://www.youtube.com/watch?v=QkY2_U8DCf4

2. Measuring the diversity in Algorithms

The UUK/GHE report is probably the first consistent attempt to measure the diversity in degree algorithms across the UK HE sector; in this regard, its significance has yet to be fully appreciated. It employs a survey-based methodology and has responses from 113 UK universities, which is 70% of UK HEIs with degree awarding powers.

In terms of the diversity in the use of weightings, table 1 shows that of the 98 universities to respond to questions on weightings, 76% said they applied a differential weighting to year 2 and 3 marks, 8% only use year 3 marks and 8% treat year 2 and 3 marks equally. It is notable that only 7% of the sample include first year marks in their algorithms.

Table 1

WEIGHTINGS [%]			
Year 1	**Year 2**	**Year 3**	**Number**
-	-	100	8
-	20	80	6
-	25	75	18
-	30	70	13
-	33	66	19
-	40	60	19
-	50	50	8
10	30	60	4
11.1	33.3	55.6	2
11.1	44.4	44.4	1
Total			**98**

Reproduced from: *Understanding Degree Algorithms*, Universities UK-GuildHE project, Oct 2017, Table 4, Page 26.

Table 2

Discounting Practice	Number
No discounting - all 120 credits used (at each level)	60
Only the best credits used (however defined)	25
Only the best credits used but where the number varies between programme years (e.g best 100 credits from year 3, best 80 credits from year 2)	11
Not enough information	8
Total responces	**104**

Of the 104 replies covering the practice of discounting, 60 (or 37% of all UK HEIs) said all 120 credits were used in their algorithms (see table 2 – drawn from p. 37, UUK/GHE, 2017). Accepting that more information is needed, the counterfactual suggests that the practice of discounting is widespread, or at least not confined to specialist institutions or specific groups of universities. From the survey data, it follows also that a large proportion of those universities that discount (table 2) also apply differential weightings (table 1).

The report also notes that 8 providers used more than one algorithm, and in further interviews with these institutions found that "although they may have a significant impact on individual students, they appear to have a limited impact on the overall profile of awards made" (UUK/GHE, 2017, p. 27). It is here that the UUK/GHE project could have done more, namely to test this claim, if not the impact of different weightings in general, which is explored here in sections 3 and 4.

3. Diverse Algorithms and individual marks

Table 3 shows the degree 'average' for the <u>same mark profile</u> for student A across differing algorithms used by nine example universities ([UNI [A] to[I]).

UNI [A] treats all years as ‘counting’ and they are equally weighted – the degree classification is a low U2 (2:1) and delivers the lowest degree mark – 62.25%. This outcome is similar to the Grade Point Average (GPA) which also takes all years of study into account. Here the student’s GPA would be 3.29 and their grade would be classified as ‘B’ (see appendix).

UNIs [B] to [F] only take years 2 and 3 into account but apply different weightings to each year. While the degree classification is the same, U2, the degree mark ranges from 66.69% up to 68.08%.

In the case of UNI[C]’s mark 67.15%, if this was Kent University the student’s classification would be uplifted to a 1st, because there are 120 credits with a mark of 70% or above. Likewise, UNI [F]’s mark of 68.08% might be eligible for an uplift depending on whether the preponderance principle is applied and what mark triggers the decision (it is likely they would be eligible for an uplift with 75 year 3 credits with marks of 70% or above).

UNIs [G] and [H] also only use year 2 and 3 marks but both ‘discount’ some of the credits at each year, 20 credits in the case of UNI[G], 30 credits in the case of UNI[H]. In the case of UNI[G] the student’s mark (69.55%) is borderline and they might get an automatic ‘uplift’ in classification from a U2, to a 1st. The degree mark (70.42%) in UNI[H] is a clear 1st.

Lastly, UNI [I], not only applies a different weighting for each level, it applies differential discounts to each year (40 credits in year 2 and 20 credits in year 3). Like the mark in UNI [G], the mark here (69.88%) is borderline and likely to get an automatic uplift.

Table 3

Mark Profile: Student A					Degree Mark - using different algorithms		
Module Name	**Credit**	**Year**	**Mark**		**Counting Years & Credits**	**Weighting [Y2/Y3]**	**Degree Mark**
Module 1	15	1	58				
Module 2	15	1	60		UNI [A]		
Module 3	30	1	48		Y1+ Y2+ Y3 [all credits]	Equal	62.25
Module 4	15	1	57		UNI [B]		
Module 4	15	1	60		Y2 + Y3 [all credits]	50-50	66.69
Module 5	30	1	48		UNI [C]		
					Y2 + Y3 [all credits]	40-60	67.15
Module 6	30	2	70		UNI [D]		
Module 7	15	2	71		Y2 + Y3 [all credits]	33-67	67.47
Module 8	15	2	68		UNI [E]		
Module 9	30	2	68		Y2 + Y3 [all credits]	25-75	67.84
Module 10	15	2	52		UNI [F]		
Module 11	15	2	48		Y2 + Y3 [all credits]	20-80	68.08
					UNI [G]		
Module 12	15	3	71		Y2 + Y3 [Best 100 credits]	25-75	69.55
Module 13	15	3	68		UNI [H]		
Module 14	15	3	62		Y2 + Y3 [Best 90 credits]	25-75	70.42
Module 16	15	3	65		UNI [I]		
Module 17	30	3	71		Y2 [Best 80 credits]	40-60	69.88
Module 18	30	3	72		Y3 [Best 100 credits]		

While we would expect different outcomes from different algorithms, the extent of the differences is a cause for concern. Not surprisingly, the greatest difference in marks is between UNI[A] and UNI[H] - just over eight percentage points, if we are looking at those algorithms covering only year 2 and 3 marks (i.e. UNI[B] to UNI[I]), the difference is 3.73 percentage points. Comparing 'like-for-like', then the difference in marks between UNI [B] and UNI [F] (different weighting but no discounting) is smaller at 1.39 percentage points.

It follows that the difference between those algorithms that discount and those that do not, will become greater as the discounted module marks get lower. Furthermore, the way marginal or borderline marks can be uplifted can have a significant impact – in table 3 most of the U2 marks could potentially be uplifted to 1st.

There is a real risk that different algorithms could result in different classifications given on a student's mark profile. The student from UNI [B] – for example Oxford Brookes – might be startled by the realisation that if they had they chosen to attend a different university (e.g. UNI[C] - Kent) then they might have achieved a 1st, all other things being equal.

4. Diverse algorithms and the overall profile of the award

To test the claim that algorithms "have a limited impact on the overall profile of awards made" a simulation has been run using the same set of marks across five different algorithms.

The set of marks are *actual* marks from a medium sized degree course in an established subject delivered in a large English university (call it 'BA (Hons) ABC'). The set of marks used excludes students who may have failed a module in their final year and does not take into account any boarder line adjustments. Given that degree outcomes can and do change year on year, the simulation looks at three years of data. Table 4 lists the median marks and standard deviations per year and overall, per cohort – this suggests that there will be a high proportion of U2s in any of the estimated profiles. It is worth noting that in this case the average yearly marks are declining.

Table 4	BA (Hons) ABC			
Cohort	Median Marks and Stadard Deviation per year of study and overall			
	Year 1	Year 2	Year 3	ALL
2015 [n = 68]	67.70	61.60	66.15	64.82
	7.58	8.08	6.31	6.51
2016 [n = 68]	65.30	61.30	66.00	63.42
	7.55	7.85	7.49	6.66
2017 [n = 75]	61.40	59.90	64.90	62.40
	7.47	8.10	6.78	6.60

The first five algorithms only use year 2 and 3 marks, where algorithms one to four use different weightings and algorithm five goes further and discounts 20 credits in each 'counting ' year. As a comparison, algorithm 6 includes all years of study, where each year is equally weighted (which again would be similar to a GPA approach).

Table 5 Distribution of degree classifications using different algorithms [a simulation]						
Algorithm	1	2	3	4	5	6
Years used	Y2 / Y3	Y2 / Y3	Y2 / Y3	Y2 / Y3	Y2 / Y3	Y1 / Y2 /Y3
Weighting of year	50 -50	33 - 67	40 - 60	25 - 75	25-75	EQUAL
Credits Used	ALL	ALL	ALL	ALL	Best 100 Y2 + 100 Y3	ALL
2015 [n = 68]	UNI [1]	UNI [2]	UNI [3]	UNI [4]	UNI [5]	UNI [6]
1ST	12	16	15	17	27	19
U2	34	34	33	35	33	35
L2	21	18	20	16	8	14
3RD	1	0	0	0	0	0
Number 1st + U2	46	50	48	52	60	54
2016 [n = 68]	UNI [1]	UNI [2]	UNI [3]	UNI [4]	UNI [5]	UNI [6]
1	13	17	15	20	22	12
U2	38	35	37	32	34	38
L2	14	13	13	13	11	16
3	3	3	3	3	1	2
Number 1st + U2	51	52	52	52	56	50
2017 [n =75]	UNI [1]	UNI [2]	UNI [3]	UNI [4]	UNI [5]	UNI [6]
1	9	11	9	11	19	9
U2	38	38	38	36	37	37
L2	26	26	26	27	19	25
3	2	1	2	1	0	4
Number 1st + U2	47	49	47	47	56	46
Three years [n= 211]	UNI [1]	UNI [2]	UNI [3]	UNI [4]	UNI [5]	UNI [6]
1ST	34	44	39	48	68	40
U2	110	107	108	103	104	110
L2	61	57	59	56	38	55
3RD	6	4	5	4	1	6
Number 1st + U2	144	151	147	151	172	150

Table 6 Distribution of degree classifications using different algorithms [a simulation] - %						
Algorithm	1	2	3	4	5	6
Years used	Y2 / Y3	Y2 / Y3	Y2 / Y3	Y2 / Y3	Y2 / Y3	Y1 / Y2 /Y3
Weighting of year	50 -50	33 - 67	40 - 60	25 - 75	25-75	EQUAL
Credits Used	ALL	ALL	ALL	ALL	Best 100 Y2 + 100 Y3	ALL
2015 [n = 68]	UNI [1]	UNI [2]	UNI [3]	UNI [4]	UNI [5]	UNI [6]
1ST	18%	24%	22%	25%	40%	28%
U2	50%	50%	49%	51%	49%	51%
L2	31%	26%	29%	24%	12%	21%
3RD	1%	0%	0%	0%	0%	0%
Number 1st + U2	68%	74%	71%	76%	88%	79%
2016 [n = 68]	UNI [1]	UNI [2]	UNI [3]	UNI [4]	UNI [5]	UNI [6]
1	19%	25%	22%	29%	32%	18%
U2	56%	51%	54%	47%	50%	56%
L2	21%	19%	19%	19%	16%	24%
3	4%	4%	4%	4%	1%	3%
Number 1st + U2	75%	76%	76%	76%	82%	74%
2017 [n =75]	UNI [1]	UNI [2]	UNI [3]	UNI [4]	UNI [5]	UNI [6]
1	12%	15%	12%	15%	25%	12%
U2	51%	51%	51%	48%	49%	49%
L2	35%	35%	35%	36%	25%	33%
3	3%	1%	3%	1%	0%	5%
Number 1st + U2	63%	65%	63%	63%	75%	61%
Three years [n= 211]	UNI [1]	UNI [2]	UNI [3]	UNI [4]	UNI [5]	UNI [6]
1ST	16%	21%	18%	23%	32%	19%
U2	52%	51%	51%	49%	49%	52%
L2	29%	27%	28%	27%	18%	26%
3RD	3%	2%	2%	2%	0%	3%
Number 1st + U2	68%	72%	70%	72%	82%	71%

Table 5 shows the distribution in the number of classifications awarded, including where all three years are aggregated for the period total. Table 6 shows the same information as a percentage distribution and the distribution of these aggregated scores is illustrated in figure 1. As a comparison, figure 2 shows the distribution of the marks had the GPA classifications been applied to the aggregated marks used in figure 1.The differences between these six profiles are significant. In the first five algorithms, as the weighting for year 3 increases from 50% to 75% then the number of 1st and U2s increase (see figure 1 – UNI1 to 5). However, and again not surprisingly, the increase is greatest when the algorithm uses discounting (i.e. algorithm 5). These results are consistent with the simulations carried out by Sinclair *et al*. (2017).

Likewise, at UCL an internal discussion paper applied the same methodology (simulations) when looking at the variation in algorithms *within* UCL programmes. They found that as an institution it used 33 different algorithms to determine the degree classification. In addition, the difference between the lowest and highest individual mark was 4.57 percentage points. The UCL paper also looked at the algorithms used by a range of competitor institutions (i.e. 19 Russell Group universities) – and 'benchmarked' their "harmonised scheme" (p. 6) against this sector. It is notable that while the UCL year weightings place emphasis on exit velocity, its current algorithms and the proposed harmonised algorithm includes year 1 marks (p. 5).

Figure 1
Distribution of Degree Classifications
Using Different Algorithms
2015 - 2017 Aggregated

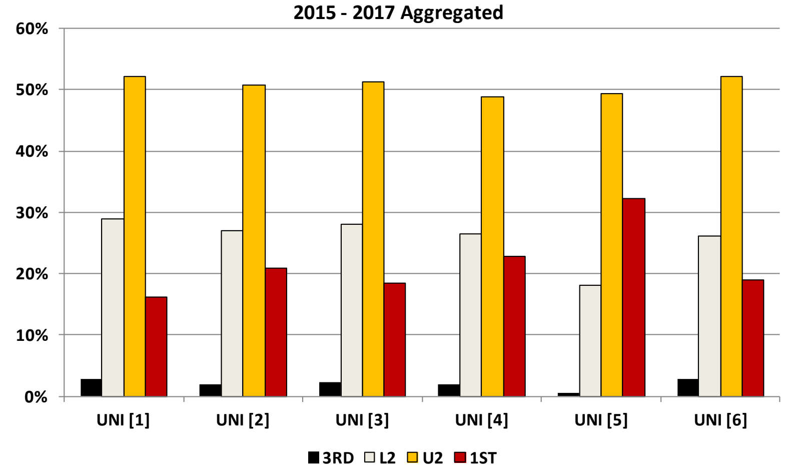
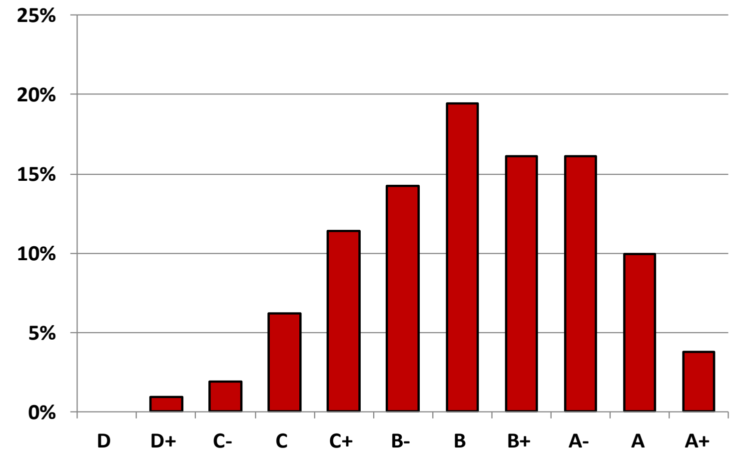


Figure 2
Grade Point Average Marks
[SIMULATION]
2015 - 2017 Aggregated



GPA Grade conversion				
D+	C-	C	C+	B-
43-47	48-49	50-53	54-56	57-60
B	B+	A-	A	A+
61-63	64-66	67-70	71-74	≥75

5. Conclusion

It is important to stress that the discussion here is not about 'comparability,' which is often summed up as "whether a 2:1 in history from Oxford Brookes University is "equivalent" to a 2:1 in the subject from the University of Oxford" (Attwood 2010). In his report for the Higher Education Policy Institute (HEPI), Professor Roger Brown is clear that "there are almost inevitably differences in the standard of outcomes of different universities and it is right that should be so." He also notes that "It makes little sense to seek comparability of outcomes, and indeed it would actually be wrong to do so" (p. 8). Brown's (2010) view and his arguments have merit but the starting point would be to clarify whether we are comparing the same degree classification based on the student's actual marks.

The simulation carried out here shows that the varying use of differential weighting and the discounting of module marks creates artificial differences in the degree outcomes between universities. This then calls in to question the validity of relevant KIS data and any national league table that uses degree outcomes as part of its metrics. Likewise, those bodies conferring professional accreditation to UK HE courses might be uncomfortable with the artificial differences created by the sector's current practices.

Furthermore, given the variation in degree algorithms used within the HE sector, using the proportion of 1st and U2 awarded is not a particularly valid measure of grade inflation. This can only be reasonably estimated using actual module marks (e.g. see table 3), which are data that are not routinely collected by HESA.

In the meantime, it is a concern that under the current system the same set of marks can result in such a wide range of potential 1st class honours, in this example (using the aggregated marks) the range starts at 16% and stretches to 32%. If equity and rigor are to be the hallmarks of UK higher education provision, these differences cannot be ignored or defended.

If valid comparisons between courses are to be made, it is clear that all universities should adopt the same algorithm when classifying degree outcomes. In this context the consistent use of the GPA classification system (or similar) has clear benefits. The use of more categories (A+ to F-) gives a better understanding of where (if any) grade inflation is occurring. From the student's perspective, GPA is also intuitive, easy to understand and calculate, and complements the information found in a student's Higher Education Achievement Report (HEAR). However, the widespread adoption of GPA has to be consistent, and if UK universities apply differential weighting between years and discount module marks then the outcome will be meaningless to all stakeholders.

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Appendix: The Grade Point Average explained

The GPA is simply the average attainment over all the modules a student takes. The average is calculated by attaching a number to the grade achieved for each module, and using that number to work out a mean average;

- The **grade** is the measure of achievement in a module (see table 7[a]).
- The **grade point** is the number attached to each grade.
- The **grade point average** [GPA] is the mean average of the grade points
- This overall GPA is also given a 'grade' depending on where it falls in table 7[a]. For example, from table 7, the GPA for the whole degree is 3.29, since this value is greater than 3.25 and less than 3.50 the overall grade is a B (from table 7[a]).

Table 7

From Table 3

Module Name	Credit	Year	Mark	Grade Point	Grade	Credit	[*] Credit x Grade Point	Credits Studied	Grade Point Average	Level Grade
MOD 1	15	1	58	3.00	B-	15	45.00			
MOD 2	15	1	60	3.00	B-	15	45.00			
MOD 3	30	1	48	2.25	C-	30	67.50			
MOD 4	15	1	57	3.00	B-	15	45.00			
MOD 5	15	1	60	3.00	B-	15	45.00			
MOD 6	30	1	48	2.25	C-	30	67.50			
Year 1	120	*Average*	53.38		*Year 1*	120	315.00	÷ 120	2.63	C
MOD 7	30	2	70	3.75	A-	30	112.50			
MOD 8	15	2	71	4.00	A	15	60.00			
MOD 9	15	2	68	3.75	A-	15	56.25			
MOD 10	30	2	68	3.75	A-	30	112.50			
MOD 11	15	2	52	2.50	C	15	37.50			
MOD 12	15	2	48	2.25	C-	15	33.75			
Year 2	120	*Average*	64.38		*Year 2*	120	412.50	÷ 120	3.44	B
MOD 13	15	3	71	4.00	A	15	60.00			
MOD 14	15	3	68	3.75	A-	15	56.25			
MOD 15	15	3	62	3.25	B	15	48.75			
MOD 16	15	3	65	3.50	B+	15	52.50			
MOD 17	30	3	71	4.00	A	30	120.00			
MOD 18	30	3	71	4.00	A	30	120.00			
Year 3	120	*Average*	68.75		*Year 3*	120	457.50	÷ 120	3.81	A-
Overall		*Average*	62.17		*Overall*	360	1,185.00	÷ 360	3.29	B

Table 7[a]		
The GPA scale for UK higher education		
Grade	Percentage mark	Grade point
F-	≤29	0.00
F	30-34	0.50
F+	35-37	0.75
D-	38-39	1.00
D	40-42	1.50
D+	43-47	2.00
C-	48-49	2.25
C	50-53	2.50
C+	54-56	2.75
B-	57-60	3.00
B	61-63	3.25
B+	64-66	3.50
A-	67-70	3.75
A	71-74	4.00
A+	≥75	4.25

[*]Because the credit size for modules varies [e.g. 15 and 30 or 20 and 40] we calculate a weighted GPA mark by multiplying the Grade Point by the credits. For example, the mark in MOD 1 (15 credit module) is 58%, in table 7[a], this is a B-, with a grade point of 3.0. The weighted Grade Point is therefore 15 x 3.0 = 45.00. To calculate the GPA for a number of modules e.g. per term, per year or the whole degree, we simply add up all the weighted Grade Points and divide by the number of credits studied

Besides taking in to account all a student's marks, the GPA does away with the traditional classification (1st, 2:1, 2:2, & 3rd) and replaces them with 15 grades (A+ to F-). Furthermore, unlike the current system, with GPA, students with exactly the same marks get exactly the same grade - irrespective of where they studied. For employers GPA offers a national standard - a way to make a direct comparison between two graduates from different universities.

Problems with the GPA

In many respects, the inclusion of the Grade Point value is problematic and might cause some unnecessary distress – if not unnecessary academic appeals and complex academic regulations.

The Grade Point (GP) is one number representing a range of numbers e.g. GP: 3.00 [grade B] represents the range of marks: 61% to 63.9% (see table 7[a]). If the student's marks in table 7 where all at the lower end of the range for each grade boundary (D, C, B, A etc.), their overall weighted average would be **62.04%** - which is comfortably within the B range (i.e. 61% to 63.9%).

However, if the student's marks where at the top end of the range for each grade boundary their weighted average mark would be **64.17%**, above the B range and just tipping into the B+ range (64% to 66.9%), with the likely risk that the student would lodge an academic appeal for the higher grade. If this were likely to happen across the grade boundaries D+ and above, then exam boards would probably grind to a halt. The risk of this happening would (with some justification) encourage universities to devise a whole range of additional algorithms to calculate some nominal grade 'uplift' based on a given criteria – which again skews the actual performance data.

The simple solution is to do away with the Grade Point, and simply classify any mark outcome as suggested in table 7[a].